

THERE IS CLAIMED:

1. A method of communicating useful information taking the form of an analog or digital voltage between at least one transmitter and at least one receiver using UWB signals, said at least one transmitter including a subcarrier modulator, a high frequency oscillator and a transmission antenna, and said at least one receiver including a reception antenna and amplification and demodulation means for discriminating said useful information in a signal received at said reception antenna, which method consists in:
 - on transmission, generating a narrow frequency band high frequency carrier, modulating said high frequency carrier using a subcarrier with a modulation index at least equal to 10, and modulating said subcarrier using said useful information, and
 - on reception, demodulating said carrier to extract therefrom said subcarrier and demodulating said subcarrier to extract therefrom said useful information.
2. The method claimed in claim 1 wherein said subcarrier takes a sinusoidal, sawtooth or triangular form.
3. The method claimed in claim 1 wherein said subcarrier has a specific frequency for at least one transmitter/receiver pair.
4. The method claimed in claim 1 wherein the frequency of said subcarrier is higher than the spectral bandwidth of said useful information.
5. The method claimed in claim 1 wherein said useful information is generated from information in analog or digital form and possibly encoded.
6. The method claimed in claim 1 wherein said carrier is demodulated on reception using a delay line.
7. The method claimed in claim 6 wherein said delay line produces a time-delay τ according to the following equation:

$$\tau = \frac{N}{4f_c}$$

in which $N = 1, 3, 5$, etc. and f_c is the center frequency of the UWB signal.
8. The method claimed in claim 7, wherein said delay line is made in a circuit taking the form of a surface or bulk acoustic wave line.
9. The method claimed in claim 7 wherein said delay line is made with the aid of a coaxial cable.